

**ABSTRACT**

The invention relates to a buck converter comprising: [[ - ]] a pair  $P_0$  of switches SB, SH in series and connected to an input terminal B of the converter by the switch SB, [[-]] K other additional pairs  $P_1, P_2, \dots, P_i, \dots, P_{K-1}, P_K$  of switches in series between another input terminal A and the switch SH of the pair  $P_0$ , with  $i = 1, 2, \dots, K-1, K$ , the two switches of the same additional pair  $P_i$  are connected in series via an energy recovery inductor  $Lr_i$ ; [[-]] K input groups,  $Gin_1, Gin_2, \dots, Gin_i, \dots, Gin_{K-1}, Gin_K$ , of  $N_i$  capacitors C each in series; [[-]] K output groups,  $Gout_1, Gout_2, \dots, Gout_i, \dots, Gout_{K-1}, Gout_K$ , of  $M_i$  capacitors C each in series. The switches  $P_0$  and the K additional pairs are simultaneously controlled by first and second complementary control signals.

~~Applications: high efficiency converters with low output voltages.~~

~~Figure: 2~~